

Notice of Allowability

Application No.

10/801,562

Examiner

Ly D Pham

Applicant(s)

TAKASHIMA, DAISABURO

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 17 March 2004.
2. ☒ The allowed claim(s) is/are 17.
3. ☒ The drawings filed on 17 March 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/902,168.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 0304
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


David Nelms
Supervisory Patent Examiner
Technology Center 2800

DETAILED ACTION

1. Applicant's Pre-Amendment filed March 17, 2004 has been entered. The specification has been amended. Claims 1 – 16 and 18 – 20 have been canceled.

2. Claim 17 is presented for the examination.

Allowable Subject Matter

3. Claim 17 is allowed.

4. The following is an examiner's statement of reasons for allowance:

The prior arts teach a semiconductor memory device comprising:

a memory cell array including a plurality of memory cell blocks each having a plurality of row decoders with a plurality of row lines, a plurality of plate lines driver with a plurality of plate lines, each of said memory cell blocks includes a plurality of series-connected memory cells and at least one selection transistor serially connected to at least one end of the series-connected portion, one end of each of said memory cell blocks is coupled to a corresponding one of a bit line, the other end is connected to a corresponding one of the plate lines, a gate terminal of each cell transistor is connected to a corresponding one of the sub-word lines, the memory cell includes the cell transistor and a ferroelectric capacitor connected between source and drain terminals of the cell transistor.

The prior arts however did not teach the memory cell array above, further including a plurality of sub-arrays, a plurality of sub-row decoders provided between the plurality of respective sub-arrays, a main row decoder disposed on one-end side of the plurality of sub-arrays in a sub-word line direction, and a plurality of main-block selecting lines for respectively supplying outputs of said main row decoder to said sub-row decoders;

wherein the plurality of sub-arrays each include said plurality of sub-word lines, a plurality of bit lines, a plurality of plate lines and a plurality of memory cell blocks, the plurality of sub-arrays are arranged in the sub-word line direction, a metal interconnection used for forming the plate lines and a metal interconnection used for forming the main-block selecting lines are formed by metal interconnection layers at the same level, and a metal interconnection used for parallel connection of the cell transistor and the ferroelectric capacitor is formed by a metal interconnection layer formed at the same level as the plate lines and the main-block selecting lines.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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7. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02(b)).

8. Any inquiry concerning this communication on earlier communications from the examiner should be directed to Ly Pham, whose telephone number is **571-272-1793**. The examiner can normally be reached on Monday – Friday from 8:30am to 5:00pm, alternate Friday off. The examiner's supervisor, David Nelms, can be reached at **571-272-1787**. The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Ly Pham



June 23, 2004



David Nelms
Supervisory Patent Examiner
Technology Center 2800